

Claims:

1           1. A frequency-hopping wireless communication system, the  
2 frequency-hopping wireless communication system using at least two different  
3 bandwidth hops at frequency-hopping center frequencies, low bandwidth hops and  
4 high bandwidth hop, wherein more center frequencies are available for use for the  
5 low bandwidth hops than by the high bandwidth hops.

1           2. The frequency-hopping wireless communication system of Claim 1  
2 wherein the high bandwidth signal defines a first bandwidth range and  
3 wherein there is only one possible high bandwidth center frequency within the first  
4 bandwidth range and multiple possible low bandwidth center frequencies within the  
5 first bandwidth range.

1           3. The frequency-hopping wireless communication system of Claim 1  
2 in which a pseudo-random sequence generator is provided at a transmitter and a  
3 receiver.

1           4. The frequency-hopping wireless communication system of Claim 1  
2 wherein the same pseudo-random sequence generator is used for both high and low  
3 bandwidth signals.

1           5. The frequency-hopping wireless communication system of Claim 4  
2 wherein a certain pseudo-random sequence generation value corresponds to  
3 a different low bandwidth frequency center than high frequency bandwidth  
4 center.

1           6. A frequency-hopping wireless communication system, the  
2 frequency-hopping wireless communication system using at least two different

3 bandwidth signals at frequency-hopping center frequencies, low bandwidth hops  
4 and high bandwidth hops, wherein a high bandwidth hop defines a first bandwidth  
5 range and wherein there is only one possible high bandwidth center frequency  
6 within the first bandwidth range and multiple possible low bandwidth center  
7 frequencies within the first bandwidth range, the low frequency bandwidth hops at  
8 the multiple possible low bandwidth center frequencies not extending out of the  
9 first bandwidth range.

1           7. The frequency-hopping wireless communication system of Claim 6  
2 wherein the high frequency bandwidth is an integer number of times larger than  
3 the low bandwidth signal.

1           8. The frequency-hopping wireless communication system of Claim 6  
2 wherein a pseudo-random sequence generator is provided at the transmitter and  
3 receiver.

1           9. The frequency-hopping wireless communication system of Claim 8  
2 wherein the sequence value which indicates one of the possible low bandwidth  
3 center frequencies for a low bandwidth hop also indicates the one possible high  
4 bandwidth center frequency for a high bandwidth hop.

1           10. The frequency-hopping wireless communication system of Claim 6  
2 wherein there are multiple bandwidth ranges within the spread spectrum band,  
3 each bandwidth range allowing one possible high bandwidth center frequency.